

Name \_\_\_\_\_ /23

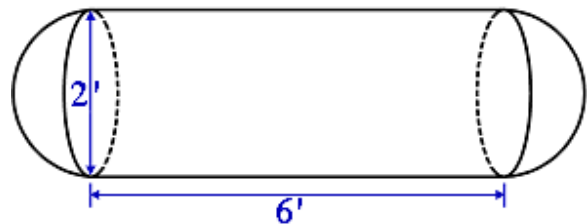
**Surface Area Application Questions – Show work clearly** (formula, substitution, simplification, answer with units circled). Show simplification steps clearly and sequentially, using algebra when warranted. If you need to round off within simplification before final answer, truncate to 4 decimal places.

1. /3 The surface area of paper required to cover a soup can (ie the *label* of the can) is **276.32cm<sup>2</sup>**. If the radius of the soup can is **4 cm**, how tall is it (rounded to 2 decimal places)? *Hint: only use the part of the formula for the rectangle*

2. /4 What is the slant height of a square based pyramid if its base is **14 inches** and the surface area is **353.4 in<sup>2</sup>**?

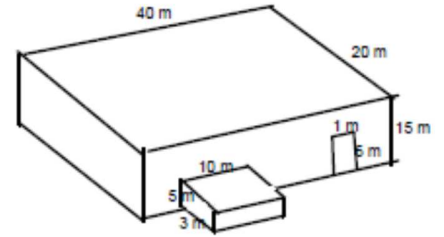
3. /4 What is the length of a rectangular prism if the surface area = **242.2 square inches**, the width is **6.4 inches**, and the height is **4.7 inches**?

4. Find the surface area of this cylindrical tank, rounded to 2 decimal places. /4



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5. A windowless warehouse measures 40 m by 20 m by 15 m (as pictured) and has an attached storage space attached to one wall of the warehouse with the measurements 10 m by 5 m by 3 m. Its one metal door measures 5 m by 1 m.



a) How many  $\text{m}^2$  of surface needs to be painted? (You won't be painting the metal door or the base of the warehouse which is on the ground. You'll paint the roof with the same paint as the walls. Don't forget to subtract the part of the storage space that overlaps and the part of the warehouse that is covered by the storage space. /5

b) If you're going to paint the building with two coats, how many  $\text{m}^2$  will be painted? /1

c) If the paint will cover around  $13 \text{ m}^2$  per litre of paint, how many litres are required? /1

d) If a can of paint holds 4 litres, how many cans of paint do you have to buy? /1